SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Date Form Completed: 2/28/2015

General Site Information

Region:	Region 4	City:	Birmingham	State:	AL
CERCLIS EPA ID:	ALN000410750		CERCLIS Site Name:	35th Avenue	
NPL Status: (P/F/D)	Proposed		Year Listed to NPL:	2014	

Brief Site Description: *(Site Type, Current and Future Land Use, General Site Contaminant and Media Info, Site Area and Location information.)*

The Site is located in a mixed industrial and residential area of Birmingham, Jefferson County, Alabama, within the area historically known as North Birmingham. The residential neighborhoods within North Birmingham are an environmental justice community that is 93% African American. Other disproportionate demographic data include high: poverty rate, unemployment rate, and high school drop rate. The Site consists of an area of arsenic, lead, and benzo(a)pyrene contaminated soil from multiple possible sources, including air deposition from nearby facilities, as well as from possible flooding along Village Creek. Residential soils have also been contaminated (confirmed by visible observation in the field during soil sampling) by "borrow" fill soil in the yards potentially from the operation of several industrial facilities in the area.

The land use for this Site is mostly residential. Some parcels have been reclaimed by the City of Birmingham due to lien or flooding. These reclaimed parcels are still appropriate for residential use but are currently empty lots with no structures or have abandoned structures. Other parcels are used as churches, schools and parks with recreational activities. Land use within the Site study boundary and surrounding area varies between heavy industry, light industry, commercial, retail, and rail lines. The geographic coordinates (latitude and longitude) assigned to this Site are 33.557464 North Latitude and 86.799671 West Longitude.

General Project Information

Type of Action:	Non-time Critical Removal Action	Site Charging SSID:	B4M3
Operable Unit:	OU1	CERCLIS Action RAT Code:	RV

Is this the final action for the site that will result in a site construction completion?	☐ Yes	☒ No
Will implementation of this action result in the Environmental Indicator for Human Exposure being brought under control?	☒ Yes	☐ No

Response Action Summary

Describe briefly site activities conducted in the past or currently underway:

Arsenic, lead, and benzo(a)pyrene are hazardous substances as listed in 40 CFR § 302.4 and defined in Section 101(14) of CERCLA, as amended. Human exposure to arsenic, lead, and benzo(a)pyrene contaminated soil poses a significant threat to public health. Ingestion and inhalation are the primary pathways of exposure. Continued exposure to the soil contaminated with concentrations of arsenic (61 ppm), lead (400 ppm), and benzo(a)pyrene (1.5 ppm) exceeding the Removal Management Levels (RMLs) may pose chronic health effects, including increased incidence of cancer, to persons living in

Currently, the response action is being conducted under an approved Action Memorandum to conduct a fund-lead TCRA. A tiered risk approach is being used to address the residential parcels. Specific removal action criteria was established for Phase I of the TCRA.

Phase I of the TCRA involved excavation and restoration of approximately 50 yards. The criteria established for Phase I of the TCRA addressed parcels where concentrations exceeded Lead - 1200 ppm, Arsenic - 390 ppm, and Benzo(a)pyrene TEQ – 15 ppm. Phase I was completed August 22, 2014. Phase II of the TCRA is ongoing. Phase II is addressing the next set of yards based on a tiered risk approach. Phase II has addressed yards where the RML is exceeded (Lead – 400 ppm, Arsenic – 61 ppm, and BaP TEQ - 1.5 ppm plus where children are present. Approximately 40 parcels are being excavated during Phase II. To date, 81 properties have been completed. Phase III of the TCRA will be conducted in a similar and will set criteria at which the parcels will be selected for removal.

Specifically identify the discrete activities and site areas to be considered by this panel evaluation:

The residential yards that require removal action are located in North Birmingham, Alabama in the neighborhoods of Collegeville, Fairmont and Harriman Park. There are an estimated 320 yards that meet removal criteria because the Removal Management Levels have been exceeded for either Arsenic (61 ppm), lead (400 ppm) and/or benzo(a)pyrene TEQ (1.5 ppm) and/or the cumulative risk from all of the contaminants exceed $1x10^{-4}$. An EE/CA and streamlined risk assessment were performed in order to determine the number of parcels that require removal and the areas within the parcel (front, side, back yard) that require excavation. Additional depth characterization is underway to determine the excavation depth at each parcel. Exemption 5 - DP

Briefly describe additional work remaining at the site for construction completion after completion of discrete activities being ranked:

Exemption 5 - DP site-wide RI/FS will be conducted at the conclusion of the NTCRA to determine what additional cleanup is needed.

Response Action Cost

Total Cost of Proposed Response Action:

($ amount should represent total funding need for new RA funding from national allowance above and beyond those funds anticipated to be utilized through special accounts or State Superfund Contracts.)

Exemption 5 - DP

Source of Proposed Response Action Cost Amount:

(ROD, 30%, 60%, 90% RD, Contract Bid, USACE estimate, etc…)

Engineering Estimate/Cost Analysis (EE/CA)

Breakout of Total Action Cost Planned Annual Need by Fiscal Year:

(If the estimated cost of the response action exceeds $10 million, please provide multiple funding scenarios for fiscal year needs; general planned annual need scenario, maximum funding scenario, and minimum funding

scenario.)

Other information or assumptions associated with cost estimates?

NA

Readiness Criteria

1. Date State Superfund Contract or State Cooperative Agreement will be signed (Month)?

N/A

2. If Non-Time Critical, is State cost sharing (provide details)?

No

3. If Remedial Action, when will Remedial Design be 95% complete?

N/A

4. When will Region be able to obligate money to the site?

Immediately

5. Estimate when on-site construction activities will begin:

The remedial and removal branches have been coordinating during each phase of the TCRA. The third phase of the TCRA is scheduled for completion in June. The remedial program can be ready to transition the site to a NTCRA using the same ERRS contractor when Phase III is complete, which is scheduled for June/July 2015.

6. Has CERCLIS been updated to consistently reflect project cost/readiness information?

SEMS will be updated once the EE/CA is finalized.

Site/Project Name: **35th Avenue**

Criteria #1 - RISKS TO HUMAN POPULATION EXPOSED (Weight Factor = 5)

Describe the exposure scenario(s) driving the risk and remedy. Include risk and exposure information on current/future use, on-site/off-site, media, exposure route, and receptors:

The current and future use will remain residential. The parcels that have been identified for removal are due to contaminants (arsenic, lead, and benzo(a)pyrene) identified in the surface soil that are either above the RML and/or exceed a cumulative risk of $1x10^{-4}$ or a total HI per target organ above 1. Both adult and child receptors are subject to being exposed through ingestion and inhalation exposure pathways.

Estimate the number of people reasonably anticipated to be exposed in the absence of any future EPA action for each medium for the following time frames:

MEDIUM	<2yrs	<10yrs	>10yrs
SL	1280	1600	5000

Discuss the likelihood that the above exposures will occur:

The human receptors who reside on the parcels are already being exposed to contaminants at levels above an unacceptable risk.

Other Risk/Exposure Information?

The North Birmingham neighborhoods Collegeville, Harriman Park, and Fairmont are environmental justice communities. There are sensitive populations that reside within the community, both senior citizens and children. There have been years of complaints of cancer and respiratory illnesses in the community. The neighborhoods are located within an industrialized area are located. Nearby industry include two coke facilities, an active rail line, a recycling company and various other industry.

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Criteria #2 – SITE/CONTAMINANT STABILITY (Weight Factor = 5)

Describe the means/likelihood that contamination could impact other areas/media given current containment:

The contaminants exist within the surface soil in the residential yards. The contaminants could continue to migrate via air and surface water.

Are the contaminants contained in engineered structure(s) that currently prevents migration of contaminants? Is this structure sound and likely to maintain its integrity?

No

Are the contaminants in a physical form that limits the potential to migrate from the site? Is this physical condition reversible or permanent?

No. Contaminants could continue to migrate through air dispersion as well as through the surface water migration pathway.

Are there institutional physical controls that currently prevent exposure to contamination? How reliable is it estimated to be?

No

Other information on site/contaminant stability?

NA

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Criteria #3 – CONTAMINANT CHARACTERISTICS (Weight Factor = 3)

(Concentration, toxicity, and volume or area contaminated above health based levels)

List Principle Contaminants (Please provide average and high concentrations.):

(Provide upper end concentration (e.g. 95% upper confidence level for the mean, as is used in a risk assessment, or maximum value [assuming it is not a true outlier], along with a measure of how values are distributed {e.g. standard deviation} or a central tendency values [e.g., average].)

Contaminant	***Media**	****Concentrations/std/Mean**
Arsenic	SL	1.3 -1335.6; std 32.28/mean = 23.3
Benzo(a)pyrene	SL	0 – 42.1 ppm; std 1.65/mean = 0.59
Lead	SL	7.74 – 26,4568.5; std 176.87/mean = 215.5

*(*Media: AR – Air, SL – Soil, ST – Sediment, GW – Groundwater, SW – Surface Water)*

*(**Concentrations: Provide concentration measure used in the risk assessment and Record of Decision as the basis for the remedy.)*

Describe the characteristics of the contaminant with regards to its inherent toxicity and the significance of the concentrations and amount of the contaminant to site risk. *(Please include the clean up level of the contaminants discussed.)*

Arsenic is a well-documented human carcinogen affecting numerous organs. Prolonged arsenic exposure causes skin and lung cancer and may cause other internal cancers as well. Although it is sometimes found in its pure form as a steel grey metal, arsenic is usually part of chemical compounds. These compounds are divided into 2 groups, Inorganic and Organic.

- Inorganic compounds (arsenic combined with elements other than carbon): These compounds are found in industry, in building products (such as some "pressure-treated" woods), and in arsenic-contaminated water. This is the form of arsenic that tends to be more toxic and has been linked to cancer.
- Organic compounds (arsenic combined with carbon and other elements): These compounds are much less toxic than the inorganic arsenic compounds and are not thought to be linked to cancer. These compounds are found in some foods, such as fish and shellfish.

Lead can exist by itself as a metal, but it is more often combined with other elements in a variety of compounds. Small amounts of lead can cause serious health problems. Children under the age of 6 are especially vulnerable to lead poisoning, which can severely affect mental and physical development. The greatest risk is to brain development, where irreversible damage may occur. Higher levels can damage the kidneys and nervous system in both children and adults. Very high lead levels may cause seizures, unconsciousness and possibly death. Lead can change forms (from organic to inorganic), but it does not break down. These compounds are divided into 2 groups:

- Inorganic compounds, such as lead oxide and lead chloride, are combinations of lead with other elements.
- Organic compounds, where lead is combined primarily with carbon and hydrogen. The lead compounds that were used to make leaded gasoline, tetraethyl lead and tetramethyl lead, are examples of organic lead compounds.

Benzo(a)pyrene along with other PAHs are suspected of causing cancer in humans. BAP causes skin disorders in humans and animals, and causes harmful developmental and reproductive effects.

A Streamlined Risk Evaluation (SRE) was conducted in order to determine whether an unacceptable risk occurred (above $1X10^{-4}$ or hazard index =1) based on a cumulative effect of COCs. Results of the SRE indicated that approximately 325 properties (outside of the yards that have already been addressed by the removal program) require further action:

184 properties have soil concentrations present that exceed the Removal Management Level for Lead (400 ppm). Approximately, 134 of the parcels that exceed the Lead RML, also have concentrations present in excess of the lifetime cancer risk, ELCR. Therefore, that leaves approximately 50 parcels where the risk is attributed to Lead only.

275 properties exceed 1×10^{-4} (cumulative ELCR) for multiple COCs (Arsenic, Lead, and Benzo(a)pyrene)

Describe any additional information on contaminant concentrations which could provide a better context for the

distribution, amount, and/or extent of site contamination. *(e.g. frequency of detection/outlier concentrations, exposure point concentrations, maximum or average concentration values, etc.....)*
There are not any patterns for specific contaminants, concentrations, or proximity that have been identified. Contaminant concentrations across the various parcels within the site boundary have not shown a distribution pattern. A review of the spatial contaminant concentrations shows a relatively–random scattering of parcels requiring remediation throughout the various neighborhoods. Depth sampling intervals of 6, 12, 18, and 24 inches collected for removal activities has also failed to produce any specific contamination patterns in relation to sample depth.
Other information on contaminant characteristics?
NA

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Criteria #4 – THREAT TO SIGNIFICANT ENVIRONMENT (Weight Factor = 3)

(Endangered species or their critical habitats, sensitive environmental areas.)

Describe any observed or predicted adverse impacts on ecological receptors including their ecological significance, the likelihood of impacts occurring, and the estimated size of impacted area:

Ecological receptors have not been evaluated as a part of the EE/CA. This action is focused on protection of human health.

Would natural recovery occur if no action was taken? ☐ Yes ☐ No
If yes, estimate how long this would take.

At this time a determination regarding natural recovery can't be made.

Other information on threat to significant environment?

NA

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Criteria #5 – PROGRAMMATIC CONSIDERATIONS (Weight Factor = 4)

(Innovative technologies, state/community acceptance, environmental justice, redevelopment, construction completion, economic redevelopment.)

Describe the degree to which the community accepts the response action.

The community is familiar with EPA's approach to using removal authority to address the yards through a NTCRA. The community has been actively involved with the site. The site has already undergone several phases of a TCRA removal which was led by the Region 4 Emergency Removal and Response Branch (ERRB). The TCRA has been conducted as a phase approach where the removal actions have addressed the yards based on risk.

Describe the degree to which the State accepts the response action.

After providing conditional concurrence on the proposed listing (conditioned on an inability to provide cost share), the State of Alabama has been very outspoken in opposition to the listing since the site was proposed last fall.

Describe other programmatic considerations, e.g.; natural resource damage claim pending, Brownfields site, use of innovative technology, construction completion, economic redevelopment, environmental justice, etc…

Region 4 has been using a collaborative approach to address the environmental issues within North Birmingham. All of the media programs (Air, Water, RCRA, and Superfund) are working together. Additionally, R4 has established an Interagency Workgroup (IWG) for Environmental Justice to engage other federal agencies, local government, and private partners to work with EPA to help the North Birmingham community address health concerns, spur economic redevelopment and revitalization, blight, and address transportation, housing, employment, and education. Specific subgroups have been formed and an action plan highlighting long/short term goals will be captured in the plan.